

TAKING
COOPERATION
FORWARD



*Cultural Heritage challenges Climate Change
International WebConference ProteCHt2save , 23 June 2020*

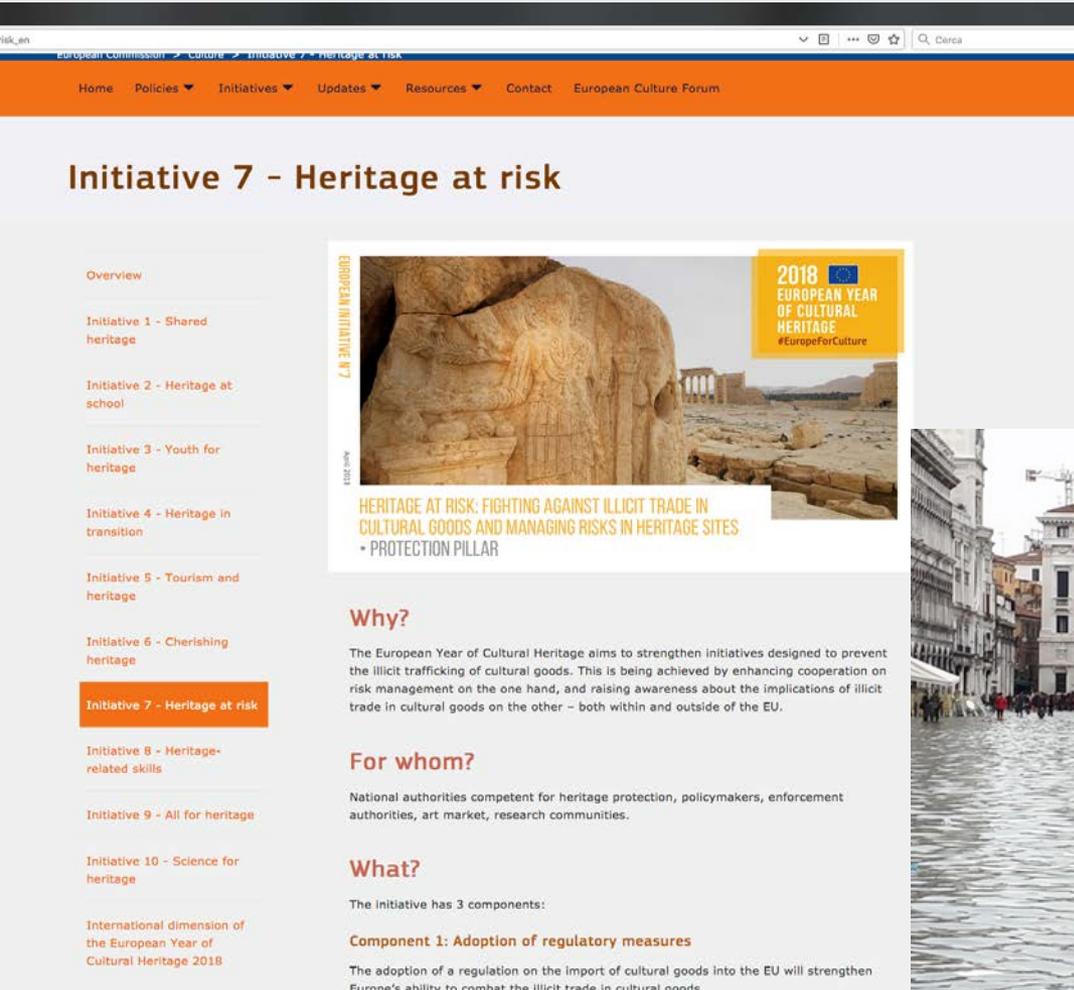


**ProteCHt2save - Risk Assessment and Sustainable Protection of
Cultural Heritage in Changing Environment**



Alessandra Bonazza/Institute of Atmospheric Sciences and Climate (ISAC-CNR)

Managing Cultural Heritage at Risk



Initiative 7 - Heritage at risk

Overview

- Initiative 1 - Shared heritage
- Initiative 2 - Heritage at school
- Initiative 3 - Youth for heritage
- Initiative 4 - Heritage in transition
- Initiative 5 - Tourism and heritage
- Initiative 6 - Cherishing heritage
- Initiative 7 - Heritage at risk**
- Initiative 8 - Heritage-related skills
- Initiative 9 - All for heritage
- Initiative 10 - Science for heritage

International dimension of the European Year of Cultural Heritage 2018



HERITAGE AT RISK: FIGHTING AGAINST ILLICIT TRADE IN CULTURAL GOODS AND MANAGING RISKS IN HERITAGE SITES
• PROTECTION PILLAR

Why?

The European Year of Cultural Heritage aims to strengthen initiatives designed to prevent the illicit trafficking of cultural goods. This is being achieved by enhancing cooperation on risk management on the one hand, and raising awareness about the implications of illicit trade in cultural goods on the other – both within and outside of the EU.

For whom?

National authorities competent for heritage protection, policymakers, enforcement authorities, art market, research communities.

What?

The initiative has 3 components:

Component 1: Adoption of regulatory measures

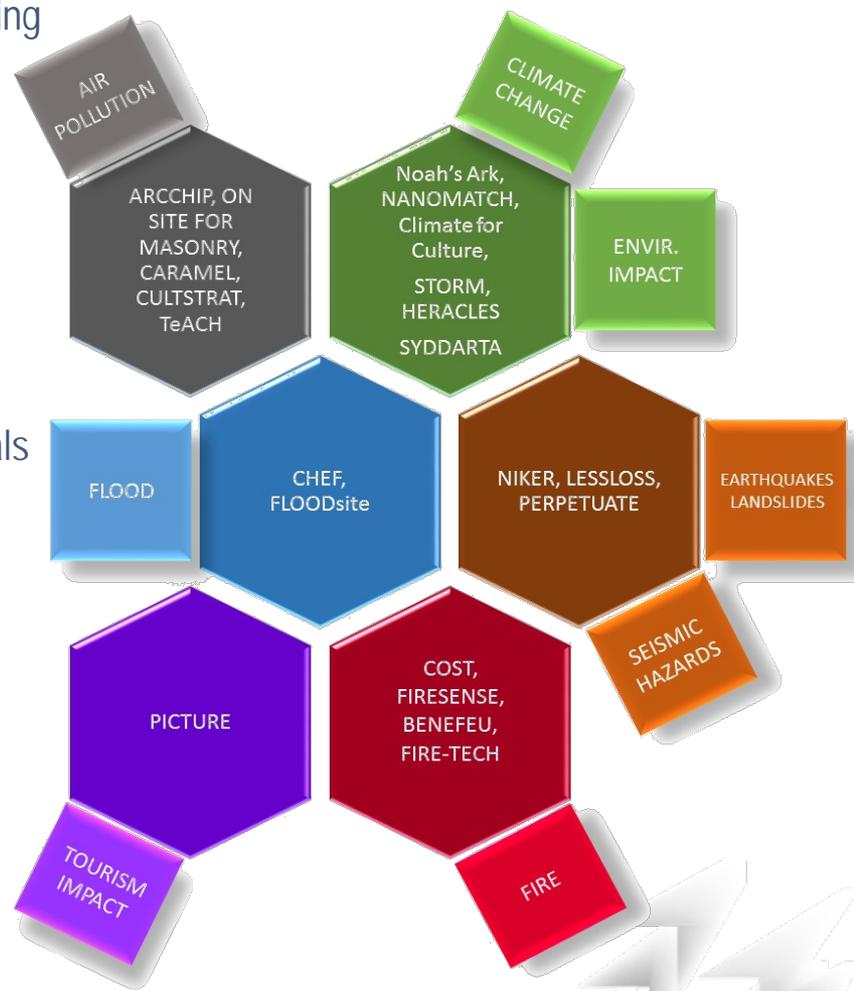
The adoption of a regulation on the import of cultural goods into the EU will strengthen Europe's ability to combat the illicit trade in cultural goods.

- *Prevention*
- *Adaptation*
- *Mitigation*



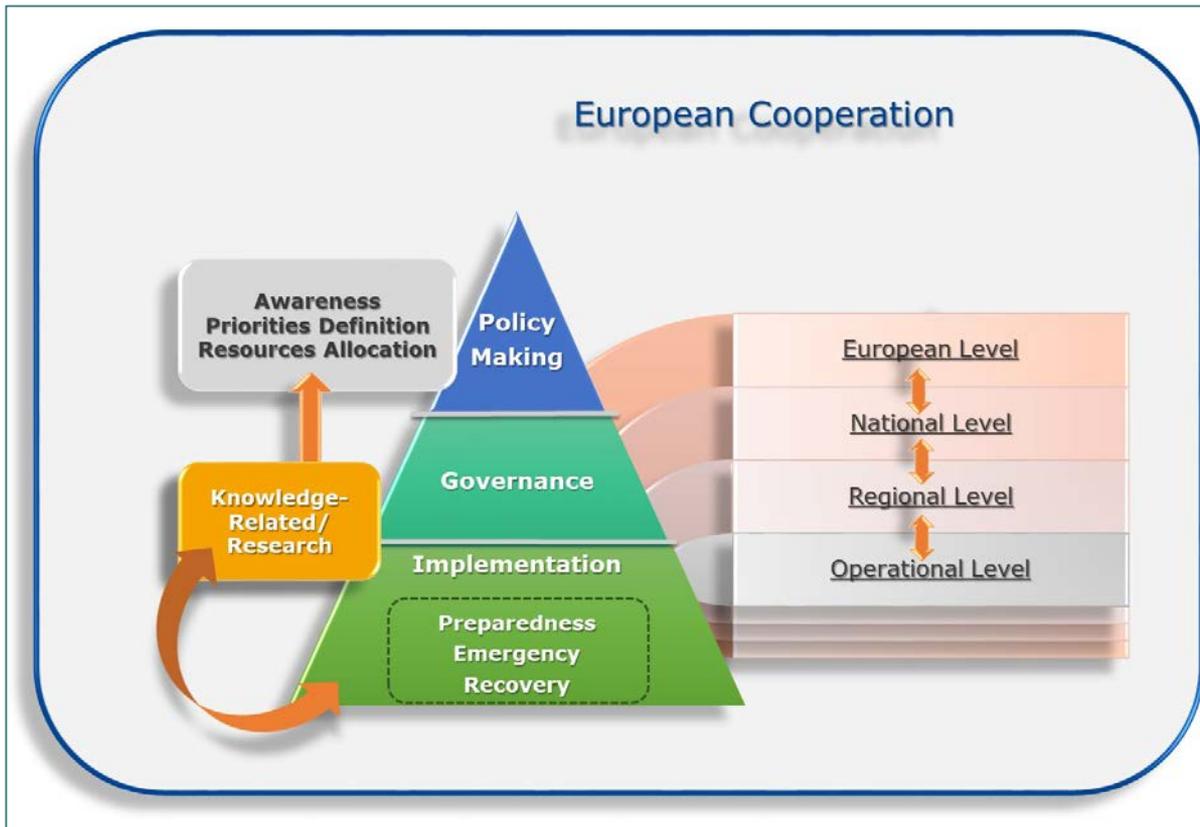
Research still existing gaps

- Lack in observation data: **monitoring** is necessary for correlating damage with climate and its change
- Need of **model downscaling** in space and time
- Improvement of **damage functions** for producing future scenarios (quantitative evaluation, indicators etc.)
- Lack in **scenarios for complex systems**, i.e. urban centres, archaeological sites. Existing scenarios mostly refers to materials
- Lack of exhaustive **multi-risk scenarios**
- Need of **long-term view measures and strategies**
- Need of **early warning system for disasters specifically addresses to CH safeguard** (encouragement of citizens involvement)
- Need of focusing on **preparedness**, measures are mainly based on response to emergency situations

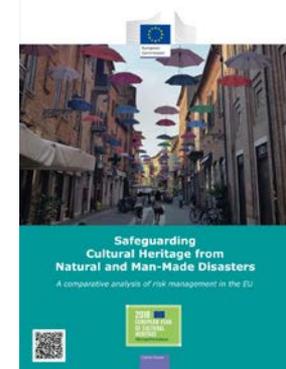


Decision making from policy to practical application

To maximise synergies between the political, administrative and operational levels in the field of disaster awareness an integrated approach is required.



Capitalisation of results/optimisation of resources/efficient communication flow



<https://publications.europa.eu/>



Priority 1. Understanding disaster risk

KNOWLEDGE (National and local levels)

Paragraph 24(d)**understand****cultural heritage impacts**, in the context of event-specific hazard-exposure and vulnerability information.

Priority 2. Strengthening disaster risk governance

Priority 3. Investing in disaster risk reduction for resilience

PUBLIC/PRIVATE STRUCTURAL/NON MEASURES (National and local levels)

Paragraph 30 (d) To **protect or support the protection** of cultural and collecting institutions and other sites of historical, **cultural heritage** and religious interest.

Priority 4. Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

Action Plan: Key Area 4 – Supporting the development of a holistic disasters risk management approach

Develop good practices on the integration of **cultural heritage in the national disaster risk reduction strategies** to be developed by EU Member States.



GUARDING HERITAGE FROM NATURAL HAZARDS



Climate change and other natural hazards pose a risk for cultural heritage assets and the people around them. ProteCHt2save is a project that works to protect the heritage and nearby populations - especially against the risk of floods. ProteCHt2save produces tools to help local officials manage risks and develop action plans for emergencies.

www.interreg-central.eu/culture



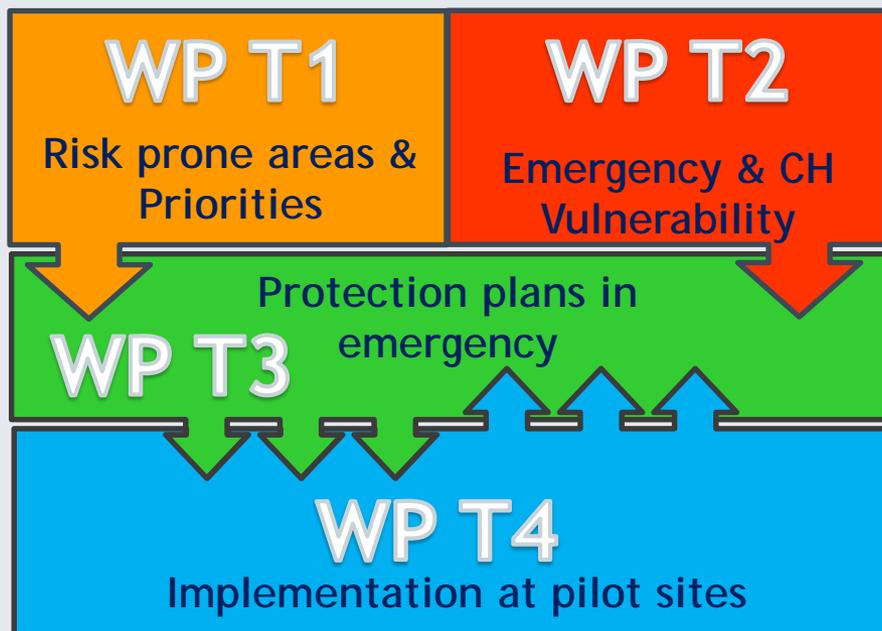
AUSTRIA	Niederösterreich
CROATIA	Jadranska Hrvatska
CZECH REPUBLIC	Praha
HUNGARY	Dél-Dunántúl
ITALY	Emilia-Romagna
POLAND	Śląskie
SLOVENIA	Vzhodna Slovenija



PROJECT BUDGET
2.15
MILLION €

ERDF FUNDING
1.79
MILLION €

Project structure



photos: Miloš Drdäcký, Danube University Krems, Mein Bezirk



Risk mapping for the protection of Cultural Heritage exposed to climate extremes

Risk = Hazard x Vulnerability x Exposure

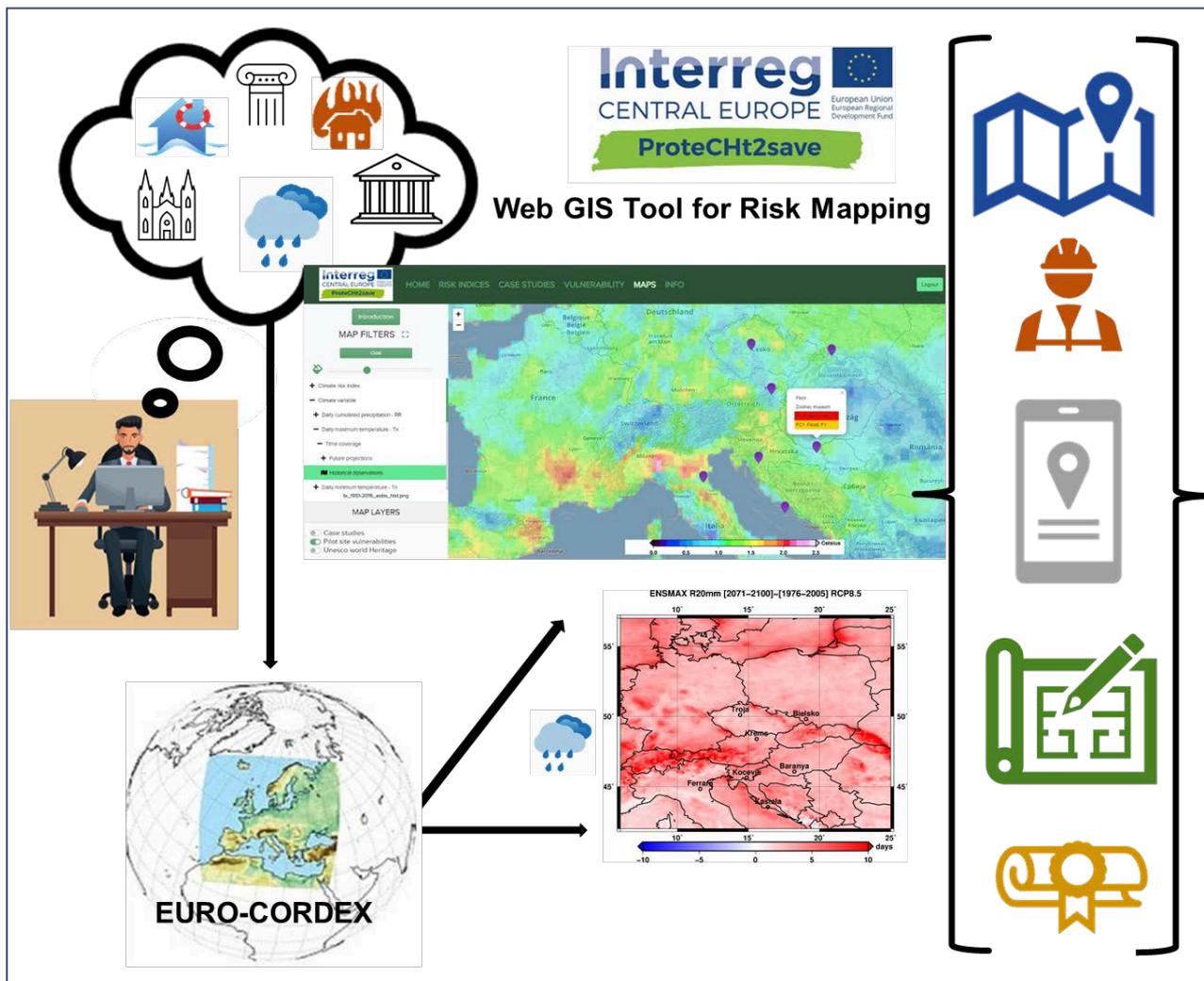
- Physical
- Managerial

Hazard

Presence/
Absence



Risk mapping for the protection of Cultural Heritage exposed to climate extremes



Euro-CORDEX (Coordinated Downscaling Experiment - European Domain) **RCMs**

- **0.11° lat-lon resolution (~12 km)**
- **Historical and future simulations**
- **Two future scenarios (RCP4.5 and RCP8.5)**

Station based reference dataset E-OBS (25 km), used for correcting the temperature and precipitation provided by the RCMs.

- 12 combinations of GCM/RCM
- Downscaling
- Extreme climate (heavy rain, flood, drought)
- Monumental complexes and related collections indoor/outdoor)
- Vulnerability



Ranking the vulnerability of Cultural Heritage in a changing environment

Information on CH Assets 				
Rank	Type	Vulnerability	Examples	Preventive measures and priorities
Inf0	Complete description of CH asset exists and is available to all stakeholders involved	No major vulnerability issues. Comprehensive risk management plans can be developed and appropriately shared	Data concerning CH assets are complete (maps, condition assessment of objects and records of contents), accessible to all relevant stakeholders and up-to-date	Regular inspection of assets is required on periodic basis to keep risk management plan up-to-date; Regular maintenance is also necessary to ensure conditions of the asset
Inf1	Partial or complete data existing but not available to stakeholders	Loss might be expected particularly during rescue activities when handling, transportation and storage requirements are not accessible	Examples include information concerning moveable heritage such as collections and artefacts in a museum are not available to rescue units	Records of moveable heritage stored in buildings with data on their location and description for evacuation purposes; Digitalization of CH related data; Integration of existing databases
Inf2	Only partial, not up-to-date or incomplete information exist	Damage is expected to the CH object and its contents. Failure of structural components and loss of moveable objects can occur due to incorrect, missing or not valid information	Maps and databases related to CH assets present in a specific area exist however significant information is missing or invalid due to changes in time of asset vulnerability or hazard level	Regular inspection identifying and marking stock at risk through mapping; Damage assessment and evaluation; Records of moveable heritage stored in buildings
Inf3	No information about cultural heritage assets (all or one of the following: location, conditions, contents)	Different levels of damage from minor to collapse can occur even in the case of actions of minor intensity. Lack of information can seriously affect the proper determination of safety against natural disaster or weather effects (e.g. in case of weather induced degradation of mechanical properties of material load bearing capacity might be overestimated)	No mapping of CH assets present in a risk-prone area is available. Unknown structural and material conditions of assets. No data concerning valuable contents of buildings are known.	Regular inspection and repair of found deficiencies; Identifying and marking stock at risk through mapping; Damage assessment and evaluation; Records of moveable heritage stored in buildings; Digitalization of CH related data; Integration of existing databases

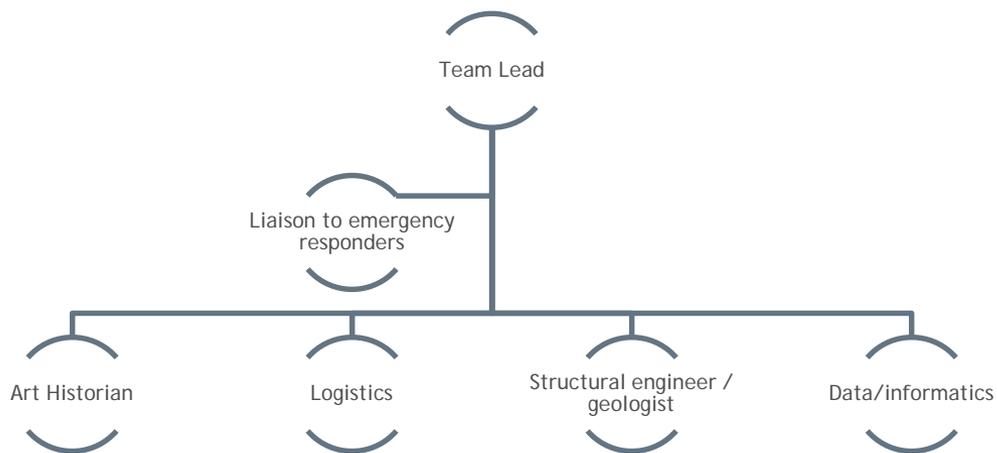
**GENERAL
MANAGERIAL
CRITICAL
ELEMENTS**

Produced utilizing the works developed within the “Deliverable D.T2.1.3 Decision support tool” by ITAM, the Deliverable D.T1.2.1 1. Risk Assessment of Cultural Heritage in Central Europe in Facing Extreme Events” and the EU publication “Safeguarding Cultural Heritage from Natural and Man-Made Disasters”



Preparedness strategies and evacuation plans for safeguarding Cultural Heritage at risk

Cultural heritage rescue team (CHRT)



Preparedness strategies and evacuation plans for safeguarding Cultural Heritage at risk



VIDEO GAME: VLTAVA RISING



ProteCHt2save pilot sites: lessons learnt

7 pilot actions conducted linked to climate change and variability associated with hydrometeorological and climate extremes

Monumental Complexes/Museums

Preparedness strategies

Evacuation in emergency



-  Flood events in large basin
-  Fire due to drought
-  Extreme events of heavy rain



ProteCHt2save: taking cooperation forward

Output capitalisation in H2020 and Interreg Projects



Seven countries, three pilot sites, hundreds of activities

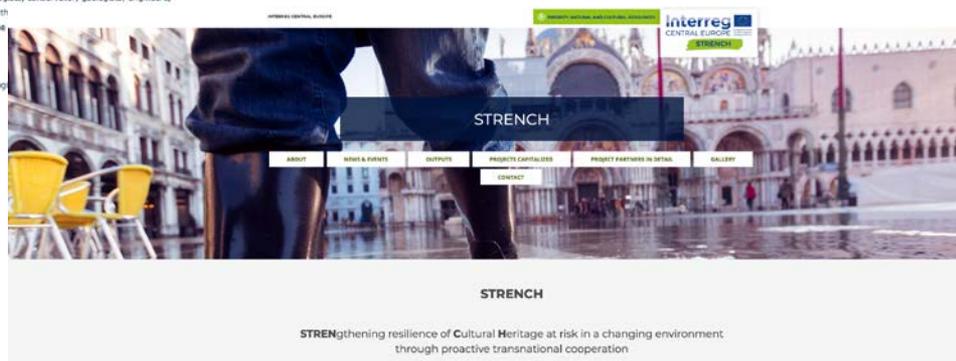
Documentation and conservation of Underwater Cultural Heritage are crucial to preserve humankind's history and traditions. Tectonic project will promote an intersectoral collaboration between academic and non-academic professionals (technical experts, archaeologists, conservator, geologists, engineers, computer scientists) working in different topics related to the Underwater Cultural Heritage. It will also support them to respond in a more efficient way and find new solutions to the complex issues still existing in the

Documentation & Mapping



Open technology

MoU with Municipalities involved in ProteCHt2save





Alessandra Bonazza
Impacts on Environment, Cultural Heritage and Human Health
Institute of Atmospheric Sciences and Climate, ISAC-CNR
<http://www.isac.cnr.it/>

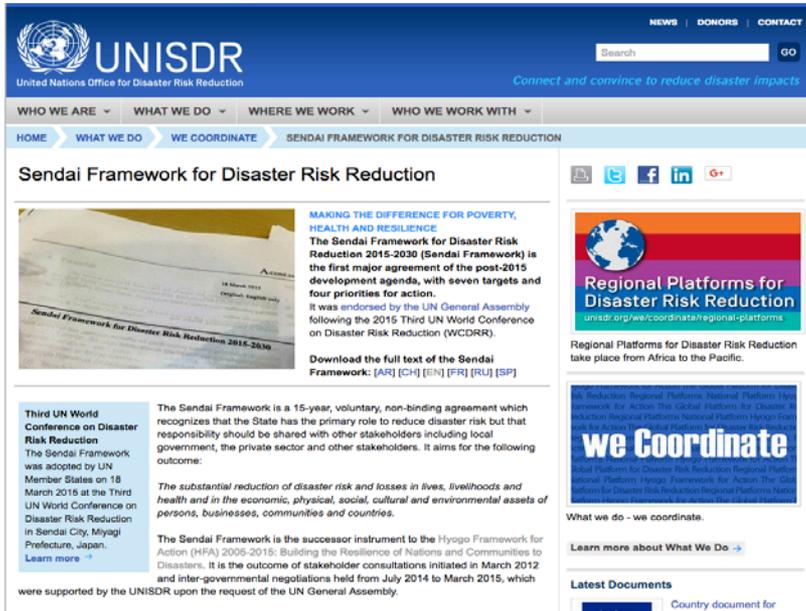
✉ a.bonazza@isac.cnr.it

📱 +39 0516309576

THANK YOU



SENDAI FRAMEWORK FOR DISASTERS RISK REDUCTION, 2015-2030



UNISDR
United Nations Office for Disaster Risk Reduction

Connect and convince to reduce disaster impacts

WHO WE ARE | WHAT WE DO | WHERE WE WORK | WHO WE WORK WITH

HOME | WHAT WE DO | WE COORDINATE | SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION

Sendai Framework for Disaster Risk Reduction

MAKING THE DIFFERENCE FOR POVERTY, HEALTH AND RESILIENCE
The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) is the first major agreement of the post-2015 development agenda, with seven targets and four priorities for action. It was endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR).

Download the full text of the Sendai Framework: [AR] [CH] [EN] [FR] [RU] [SP]

Regional Platforms for Disaster Risk Reduction
Regional Platforms for Disaster Risk Reduction take place from Africa to the Pacific.

We Coordinate
What we do - we coordinate.

Learn more about What We Do →

Latest Documents
Country document for

Third UN World Conference on Disaster Risk Reduction
The Sendai Framework was adopted by UN Member States on 18 March 2015 at the Third UN World Conference on Disaster Risk Reduction in Sendai City, Miyagi Prefecture, Japan.

The Sendai Framework is a 15-year, voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders. It aims for the following outcome:
The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. It is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations held from July 2014 to March 2015, which were supported by the UNISDR upon the request of the UN General Assembly.

UNISDR has been tasked to support

Download Chart of the Sendai Framework
The Seven Global Targets

- (a) Substantially reduce global disaster mortality rate in the decade 2020-2030
- (b) Substantially reduce the number of per 100,000 in the decade 2020-2030
- (c) Reduce direct disaster economic loss
- (d) Substantially reduce disaster damage to health and educational facilities,
- (e) Substantially increase the number 2020.
- (f) Substantially enhance international support to complement their national
- (g) Substantially increase the available risk information and assessments to

The Four Priorities for Action



Adopted by United Nations Member States in March 2015: is the basis for a *disasters risk-informed approach* to policy-making, offering a coherent agenda across different EU policies to strengthen resilience to risks and shocks and supporting the EU priorities of investment, competitiveness, research and innovation.

There is need for focused action within and across sectors by States at local, national, regional and global levels in the following four priority areas:

